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Before the

FEDERAL COMMUNICATIONS COMMISSION

In the Matter of Expanding Consumers' Video Navigation Choices; Commercial Availability of Navigation Devices

MB Docket No. 16-42; CS Docket No. 97-80

Comments of Engine Advocacy and Fandor

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Engine Advocacy ("Engine") and Fandor submit these comments in response to the Federal Communications Commission (the "Commission") Request for Public Comment in the Matter of Expanding Consumers' Video Navigation Choices, MB Docket No. 16-42, CS Docket No. 97-80.[1]

Engine supports the growth of technology entrepreneurship through economic research, policy analysis, and advocacy on local and national issues. Engine works with the White House, Congress, federal agencies, state and local governments, and international advocacy organizations to educate and inform them of issues vital to fostering technological innovation.

Fandor is a subscription-based streaming video service that specializes in independent, cult, and alternative films. In addition to streaming content, Fandor partners with Apple TV, Chromecast, and Roku to distribute content that would otherwise not be included in traditional subscription-based film services (e.g., Netflix or Hulu), or disseminated via multichannel linear cable.

The set-top box market as it is currently constituted requires structural intervention to meet the objectives of Section 629 of the Communications Act. The Commission's proposed Competitive Navigation approach will introduce vigorous innovation and competition into this concentrated market by encouraging entry and by reducing multichannel video programming distributors' ("MVPDs") incentives to use their gatekeeper status and corresponding control to restrain innovation and competition.

I. Consumers, Video Creators, and Distributors Currently Suffer from the Lack of Innovation and Competition in the Set-Top Box Market

There is presently little competition in the set-top box and navigation software market. As a result, innovation in new hardware and software products and services is also lacking. Although there are a limited number of alternative set-top boxes available for cable subscribers, the boxes must use cable-issued CableCARDs to display multichannel linear programming, and such cards do not enable displaying other forms of linear television, like satellite streams. To facilitate increased innovation and consumer choice, and meet the requirements of Section 629, the Commission should promulgate rules that will introduce meaningful competition into the marketplace.

A. The lack of competition and innovation under the current regulatory scheme costs consumers billions of dollars and limits their ability to fully access programming for which they have paid.

The lack of competition in the set-top box and navigation software market harms consumers, in part by allowing MVPDs to extract high set-top box rental fees from consumers. As documented in the Commission's Notice of Proposed Rulemaking and in Senators Markey and Blumenthal's report on consumer choice, cable TV providers extract approximately $19.5

[1] Engine and Fandor may be contacted through the above-identified counsel.

billion a year in set-top box fees from their customers.[2] The average household spends more than $231 a year leasing such boxes from their providers.[3] These fees have risen 185 percent since 1994, while the cost of other consumer electronics, such as computers, televisions, and mobile phones, has dropped by 90 percent over the same time period.[4] The average household can now purchase a laptop with four gigabytes of memory for less than the cost of their annual set-top box fee.[5] Perhaps this high price would be justified if it reflected subscribers' informed choice to use their provider's set-top box after weighing all options in a competitive market. In reality, however, the overwhelming majority of subscribers—99 percent[6]—use their provider's box because of high costs to switch to an alternative set-top box and because alternative set-top boxes do not provide access to all MVPD features, such as On Demand.[7] Such market features keep subscribers locked in and competitors locked out.

As a result, startups that could bring valuable innovation and creativity to the set-top box market have been effectively excluded. There are currently no successful competitive smaller device manufacturers or software developers. The ability of MVPDs to foreclose access to their programming by rival third party software or hardware innovators stymies competition and innovation. Because the set-top box market is intrinsically linked to the ability to interoperate with linear cable content, MVPDs are currently in a position to enforce barriers to entry that preclude new competition.

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[2] Press Release, Senators Ed Markey & Richard Blumenthal, Markey, Blumenthal Decry Lack of Choice, Competition in Pay-TV Video Box Marketplace (July 30, 2015), http://www.markey.senate.gov/news/press-releases/markey-blumenthal-decry-lack-of-choice-competition-in-pay-tv-video-box-marketplace.

[3] *Id.*

[4] Chairman Tom Wheeler, *FCC Chairman Proposal to Unlock the Set-Top Box: Creating Choice & Innovation*, FCC 1 (Jan. 27, 2016), https://apps.fcc.gov/edocs_public/attachmatch/DOC-337449A1.pdf.

[5] *See, e.g.*, Chromebook, SAMSUNG ELECTRONICS, shttp://www.samsung.com/us/computer/chrome-os-devices/XE500C13-K02US (last visited Apr. 20, 2016) (screenshot available on request); Search Results for 4GB Chromebook, AMAZON, http://www.amazon.com/s/ref=nb_sb_noss_2?url=search-alias%3Daps&field-keywords=chromebook+4gb (last visited Apr. 20, 2016) (screenshot available on request).

[6] Press Release, Senators Ed Markey & Richard Blumenthal, Markey, Blumenthal Decry Lack of Choice, Competition in Pay-TV Video Box Marketplace (July 30, 2015), http://www.markey.senate.gov/news/press-releases/markey-blumenthal-decry-lack-of-choice-competition-in-pay-tv-video-box-marketplace.

[7] *See, e.g.*, *Use a CableCARD Instead of a Digital Converter*, XFINITY, http://customer.xfinity.com/help-and-support/cable-tv/what-is-cablecard (last visited Apr. 20, 2016) ("Using a CableCARD device instead of a Comcast digital converter means you will only be able to receive one-way digital cable channels and not be able to receive XFINITY On Demand, Pay Per View (PPV), or the interactive programming guide."); *see also CableCARD: Know Your Rights*, FCC (Dec. 15, 2015, 1:15 PM), https://www.fcc.gov/media/cablecard-know-your-rights ("CableCARD-ready devices currently cannot receive your cable operator's Video on Demand services.").

Set-top box market problems are symptoms of the significant lack of competition in the linear video programming market. If the market for such programming were competitive, MVPDs might compete with each other on the quality of their service, including the quality of navigation devices and software. At the very least, robust competition among MVPDs would provide consumers with the ability to differentiate between providers based on the quality and cost of their set-top box offerings. In fact, there is limited competition among MVPDs: according to a 2013 GAO report, 66 percent of households have access to three or fewer MPVDs, including two satellite providers that the GAO assumed would be available to every subscriber.[8] Pricing data in that report also indicates a noncompetitive market: "[f]rom 2005 through 2011, cable rates rose more than 33.5 percent for both basic and expanded service tiers," over twice as fast as inflation.[9] Without meaningful competitors to counteract MVPD market dominance, MVPDs lack incentives to provide innovative or cost effective set-top box options, or to make their programming available to third party software or hardware innovators.

B. The CableCARD scheme failed to stimulate competition in the market for set-top boxes because MVPDs controlled access to the cards.

Recognizing that MVPDs lack incentives to permit competition in the set-top box market, the Commission attempted to create opportunities for entry by instituting the CableCARD regime. CableCARDs permitted consumers to purchase third party devices that could compete with MVPD devices on cost, portability, and features.[10] MVPDs, however, controlled access to the actual CableCARDs, which were required to enable alternative set-top boxes to receive multichannel linear cable.[11] In many cases, a subscriber would have to request assistance from the MVPD to rent and install these cards.[12]

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[8] U.S. Gov't Accountability Office, GAO-13-576, *Video Marketplace: Competition Is Evolving, and Government Reporting Should Be Reevaluated* 10 (2013).
[9] *Id.* at 16.
[10] *See Digital Cable Compatibility: CableCARD-Ready Devices*, FCC, https://www.fcc.gov/reports-research/guides/digital-cable-compatibility-cablecard-ready-devices (last visited Apr. 21, 2016).
[11] *Id.*
[12] *See, e.g.*, Anthony Karcz, *What the FCC's 'Unlock The Box' Initiative Means for You*, FORBES (Feb. 18, 2016), http://www.forbes.com/sites/anthonykarcz/2016/02/18/fcc-unlock-the-box/#2306d18c2b6e. According to Karcz:

> [I]t took two levels of support personnel before I got to someone who could even confirm that they had Cable-Cards to rent (they're required by law to provide them when requested). After an hour on the phone, I had an appointment set up with a technician. When he arrived days later, he didn't know how to install the devices or how to activate them. It ended up being a three day affair where I walked through TiVo's setup process myself and called the technician's supervisors (several times) to get the new cards working.

Unfortunately, the CableCARD rules failed to stimulate competition in the set-top box market. Consumers encountered multiple deterrents to switching: in addition to knowing that the CableCARD option existed, consumers had to navigate the byzantine MVPD customer service hierarchy to rent a CableCARD, and often set up an appointment with an MVPD technician to assist with installation.[13] Even when they managed to successfully install a CableCARD-ready device, consumers experienced recurring problems, such as missing and pixilated channels, service issues, and difficulty switching between CableCARD-enabled devices.[14] Moreover, consumers who paid for subscriptions like video-on-demand or pay-per-view services could not access those features on their CableCARD-ready device.[15] MVPDs—who stood to lose revenue if subscribers opted for a third party set-top box—had no incentive to provide a seamless way for customers to rent a CableCARD, successfully install it in their third party device, and access all of the features and content in their TV subscription. This rulemaking presents an opportunity to learn from CableCARD's failures and create real competition.

II. Opening Up the Set-Top Box Market Will Enable Entry by Hardware and Software Innovators and Provide Consumers with Lower Prices and Increased Choices in Discovering, Accessing, and Viewing Content

Vigorous competition is a powerful driver of innovation. An open and accessible set-top box market would provide unprecedented opportunities and powerful incentives for third party device and software developers to create a heretofore unimagined range of products and applications and make them easily available to consumers. This innovation will result in lower prices and more options for consumers.

A. Facilitating competition will lower prices for set top boxes and other navigation devices and applications.

Facilitating new entry and increased competition will lead to lower prices for consumers for set-top boxes and alternative navigation software. As noted by Chairman Wheeler, unlocking the set-top box market may produce effects similar to those that resulted from the Commission's decision to unlock the phone market in 1982. When the phone market was deregulated, "[c]ompetition and game-changing innovation followed, from lower-priced phones to answering machines to technology that is the foundation of the Internet."[16] Robust innovation and the

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[13] *Id.*

[14] Letter from Neal M. Goldberg, Vice President and Gen. Counsel, Nat'l Cable & Telecomm. Ass'n (NCTA), to Marlene H. Dortch, Sec'y, FCC, CS Docket 97-80 (January 29, 2016), http://apps.fcc.gov/ecfs/document/view?id=60001416410.

[15] *See* Anthony Karcz, *What the FCC's 'Unlock The Box' Initiative Means for You*, FORBES (Feb. 18, 2016), http://www.forbes.com/sites/anthonykarcz/2016/02/18/fcc-unlock-the-box/#2306d18c2b6e ("I was never going to be able to access any Pay-Per-View or On-Demand content from my cable company. . . . It shouldn't be this hard to use the hardware you want to use to view provided content.").

[16] Tom Wheeler, *It's Time to Unlock the Set-Top Box Market*, RE/CODE (Jan. 27, 2016, 9:30 AM PST), http://recode.net/2016/01/27/its-time-to-unlock-the-set-top-box-market; *see also* Brian

unanticipated progress and benefits it will produce will lead to more competitively priced devices in this industry as well.

Increased innovation also will lower the cost of switching devices, resulting in lower costs for consumers and device manufacturers.[17] With integrated products, no CableCARDs, and clear advertising, consumers will be more aware of their choices and the enhanced range of competitive alternatives to traditional, cable-provided set-top boxes. The proposed rule will remove the burdensome and expensive need for device manufacturers to assist consumers in navigating the gauntlet of obtaining, installing, and configuring a CableCARD,[18] burdens that are especially difficult for startup device makers.

B. Access to the market by innovators and startups will unleash a wave of valuable innovation.

The Commission's proposed regulatory changes will remove barriers to entry to the set-top box market, empower new innovators and startups, and result in a wave of new creativity and revolutionary products and services. Consumers will benefit tremendously.

Opening the set-top box market will result in significant competition for new devices, applications, and services. Competition encourages product differentiation—efforts by innovators to distinguish their product from others. A comparison to Apple TV is illustrative here. When Apple TV first came on the market, it only offered a limited number of "channels" and no way to personalize the interface.[19] In contrast, Roku offered a product with methods of personalization and thirty-eight times the number of channels.[20] In particular, Apple TV did not support any third-party applications (the original Apple TV did not even stream Netflix). Roku developed in response to consumer demand for a product that streamed Netflix.[21] As it developed, it added additional channels, customizable interfaces, a wider variety of programming, and allowed third-party startup applications.[22] As Apple TV fell behind in content, and consumers demanded devices that supported third party, startup applications, Apple

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Barrett, *The FCC's War to Liberate Your Cable Box*, WIRED (Feb. 19, 2016 5:46 AM), http://www.wired.com/2016/02/fcc-set-top-box-rules.

[17] *See, e.g.*, Letter from Neal M. Goldberg, Vice President and Gen. Counsel, Nat'l Cable & Telecomm. Ass'n (NCTA), to Marlene H. Dortch, Sec'y, FCC, CS Docket 97-80 (January 29, 2016), http://apps.fcc.gov/ecfs/document/view?id=60001416410.

[18] *See id.*

[19] John Falcone, *Apple TV (2007) Review*, CNET (Mar. 21, 2007), http://www.cnet.com/products/apple-tv-2007.

[20] Patrick Allen, *The Best Private Roku Channels, and How to Install Them*, LIFEHACKER (Apr. 28, 2015, 4:00 AM), http://lifehacker.com/the-best-private-roku-channels-and-how-to-install-them-1700519600.

[21] Austin Carr, *Inside Netflix's Project Griffin: The Forgotten History of Roku Under Reed Hastings*, FASTCOMPANY (Jan. 23, 2013, 6:00 AM), http://www.fastcompany.com/3004709/inside-netflixs-project-griffin-forgotten-history-roku-under-reed-hastings.

[22] HH Editor, *Inside the Tech of the Netflix Player with Roku*, HOTHARDWARE (May 29, 2008), http://hothardware.com/news/inside-the-tech-of-the-netflix-player-with-roku1.

responded by creating the app store, allowing startups to access Apple TV's platform. Competition benefits both startups and technology giants.

The competition spurred by Roku and other streaming devices opened up the market for startups wishing to offer applications on Apple TV devices. The proposed Competitive Navigation approach allows hardware or software engineers who comply with applicable security requirements to create innovative products incorporating MVPD programming. Startups that create more effective ways to present content, search available programming, and improve user experiences will compete on equal terms with existing device makers and with MVPD-provided devices.

The opportunities for innovation and product and service differentiation that a competitive market might produce are myriad and, like most innovations, difficult to fully imagine until a creative innovator develops them. A few of the likely innovations that opening up the market would produce include:

- **Better navigability**: As the Commission has noted, increased competition will lead to innovative approaches in improved navigation, search, and access functions. New devices or software systems could seamlessly integrate navigation, search, display, and more for traditional cable content with MVPDs' over-the-top-style offerings, such as On Demand, and with non-cable over-the-top programming, such as Netflix. Users could have a single, integrated interface that could display listings, search results, history, ratings, and much more equally without regard to the source of the content. Set-top box providers could compete over content recommendations and comparison functions, an area where over-the-top programmers already compete actively.[23] Such options could also include innovations in how consumers interact with the content—such as touch screen remotes and voice commands. Innovations such as these and others that empowered innovators will create would revolutionize the television experience for all consumers, including those less physically able.[24]

- **Existing product integration**: The set-top box market has already seen some product integration with the advent of Smart TVs, which remove the need for a set-top box altogether. Smart (or "connected") TVs cannot receive cable data currently—consumers still must lease a cable box (or purchase an alternative set-top box and install a CableCARD). Not only does this drive up prices—a Smart TV already costs more than an unconnected television[25]—it increases consumer confusion by increasing the number of remotes and

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[23] *See* Ben Popper, *How Netflix Completely Revamped Recommendations for its New Global Audience*, THE VERGE (Feb. 17, 2016, 9:37 AM), http://www.theverge.com/2016/2/17/11030200/netflix-new-recommendation-system-global-regional (describing the time, effort spent in perfecting search and recommendation features on over-the-top programming).

[24] FCC, FCC Chairman Proposal to Unlock the Set-Top Box: Creating Choice & Innovation, http://transition.fcc.gov/Daily_Releases/Daily_Business/2016/db0127/DOC-337449A1.pdf.

[25] *See* SONY TELEVISIONS, http://www.sony.com/electronics/tv/t/televisions?view=compare (last visited Apr. 22, 2016).

devices consumers must use when watching television. And it doesn't allow the many benefits of integrated search, display, and access described above.

- **New product integration**: With an open market for innovation in navigation devices and software, the ability to access MVPD programming will not be restricted to traditional set-top boxes. Gaming consoles and computers, for example, could access and process multichannel linear programming. Microsoft's Xbox One, which serves primarily as a video game console, offers almost all of the "key" streaming applications such as Netflix, Hulu Plus, Twitch, YouTube, HBO Go, MLB.tv, Sling TV, ESPN, Pandora, and Amazon Prime Video.[26] Opening the set-top box market could add MVPD programming to that substantial line up and perhaps even benefit cable providers by increasing the ease and attractiveness for young adults (who have replaced set-top boxes with gaming systems) to enjoy the value of cable subscriptions.

- **Increased consumer options**: These innovations in products and services lead to more options for consumers. High-end devices could offer integration with gaming systems and powerful hardware, such as the Nvidia Shield.[27] Some devices, however, would cater to consumer demand for a less-expensive, more accessible set-top box, like Google's Chromecast, which, at $35, is fifteen percent the annual cost of renting a set-top box.[28] Currently, none of these options can compete effectively with MVPD-leased boxes because they cannot access and integrate multichannel linear programming.

- **Accessories**: Innovations in the set-top box market will lead to innovations in all aspects of the television device market. In an analogous context, for example, in the mobile phone market, phone providers offer a bevy of options, from the 5.5 inch iPhone 6s Plus (that is more powerful than some computers[29]) to the simple Jitterbug phone, designed for those who are less technologically savvy.[30] The same range of functionality and varying combinations of feature sets and price points could be incorporated into set-top boxes and their corresponding accessories, such as remotes.

- **Design options**: A competitive market forces manufacturers to consider the aesthetics of their products. Currently, the only options available to consumers to view multichannel linear programming are clunky, energy-intensive black boxes. They stand in stark comparison to the already varied design options of retail streaming devices.

[26] *See* Lauren Goode, *The Best Set-Top Box You Can Buy*, THE VERGE (Nov. 17, 2015), http://www.theverge.com/2014/7/16/5903607/best-set-top-box (describing Microsoft's Xbox as a set-top box).
[27] *See* David Nield, *Best Set-Top Boxes and Streamers of 2015: Buying Guide*, GIZMAG (Dec. 9, 2015), http://www.gizmag.com/best-set-top-box-video-streamers-2015/40802.
[28] *See id.*
[29] *iPhone 6s Plus*, APPLE, http://www.apple.com/iphone-6s (last visited Apr. 22, 2016).
[30] *Jitterbug Main Page*, GREATCALL, https://www.greatcall.com/phones/jitterbug-flip-cell-phone-for-seniors (last visited Apr. 22, 2016).

- **Energy efficiency**: A competitive market may produce more energy-efficient devices, benefitting both individual customers and society. Set-top boxes are currently the "biggest single energy user in many homes, apart from air conditioning." The 224 million set-top boxes in the United States "consume as much electricity as produced by four giant nuclear reactors, running around the clock."[31] Some set-top boxes can cost consumers as much as $100 a year in energy expenses.[32] Competition will provide an incentive for innovators to offer more energy-efficient products, allowing consumers to choose products that save them money and use fewer resources.

- **Social media**: Streaming providers, like Netflix, are already experimenting with integrating their products with social media. Other providers, such as Philo, include social-media-style features such as a "trending" feed suggesting programs to consumers. Such innovations would be a welcome and inventive addition to multichannel linear programming, which has remained a relatively solitary experience.

- **Increased diversity of content**: Innovation in user interfaces and improved integration will level the playing field for independent, minority, and special interest content providers such as Fandor, as their content will be displayed alongside traditional cable, allowing it to be searched, recommended, and accessed equally. Furthermore, intensified competition among content providers will expand the outlets for independent content *creators* to disseminate their work. Increased competition among companies like Netflix and Hulu will increase the incentives for mainstream over-the-top providers to include minority and special interest programming, lest they lose viewers to small content providers (which, in an integrated navigation system, would be displayed alongside the mainstream over-the-top programming giants).[33]

- **Increased accessibility**: A competitive marketplace will also benefit niche consumers and could broaden the consumer base for both over-the-top and MVPD programming. For example, integrated search functions will make it easier for consumers to access the programming. The current non-integrated system makes it difficult for less technologically proficient users, such as the elderly, to enjoy available streaming and viewing options.[34] Even consumers who choose not to switch to alternative set-top boxes and continue to lease from their MVPD will benefit from lower prices and increased quality due to competitive pressures on price and innovation. In addition, an integrated system that includes MVPD

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[31] Ralph Vartabedian, *Cable TV Boxes Become 2nd Biggest Energy Users in Many Homes*, LA TIMES (June 16, 2014, 10:03 PM), http://www.latimes.com/nation/la-na-power-hog-20140617-story.html.
[32] *Id.*
[33] *See also* Brian Barrett, *The FCC's War to Liberate Your Cable Box*, WIRED (Feb. 19, 2016 5:46 AM), http://www.wired.com/2016/02/fcc-set-top-box-rules ("What I hope will occur is creators of content who have been unable to get [on traditional cable distribution] may soon have a way to reach consumers directly. . . . That's something you cannot do with today's set top boxes." (quoting FCC Commissioner Mignon Clyburn)).
[34] *See* Felix Richter, *Netflix is Almost as Popular as Cable Among Young Adults*, STATISTA (Dec. 4, 2014), https://www.statista.com/chart/1688/pay-tv-adoption-in-the-us.

over-the-top-style offerings, such as On Demand, alongside mainstream over-the-top programming like Netflix in searches or interfaces, could boost cable subscriptions by demonstrating the benefits of cable to younger consumers, who are increasingly choosing over-the-top subscriptions over traditional cable.[35]

As the Commission has noted, the set-top box market is at a regulatory and innovative frontier. In other markets, dramatic and hard-to-predict advancements have been made in the last decade as a result of relatively open markets and competitive incentives. The same forces will operate on the set-top box and navigation market when they are successfully open and will lead to significant new entry and competition. While the precise type and nature of some of the innovations that will occur are difficult to predict in advance, there is every reason to believe that they will occur and that their benefits for consumers and alternative content creators and distributors will be profound.

Although some of the above innovations are already emerging to some degree, independent hardware and software innovators presently have difficulty attracting funding and finding market opportunities because of the possibility of MVPD hold-up.[36] Investors are unlikely to fund startups whose access to customers is contingent upon their competitors taking affirmative steps to facilitate that access. Under the existing framework, these startups can only thrive if MVPDs, which control 99% of the set-top box market,[37] allow it. Removing MVPDs' ability to control access to the set-top box market places startups and incumbents on equal footing and creates the opportunity for more widespread and robust access to the set-top box market.[38]

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[35] *Id.*

[36] *Cf.* Barbara van Schewick, *Point/Counterpoint: Network Neutrality Nuances*, 52 VIEWPOINTS 31, 33 (2009), http://apps.fcc.gov/ecfs/document/view?id=7020923207 ("[T]he risk of being cut off from access to users at any time and at the sole discretion of the network provider reduces independent innovators' incentive to innovate and their ability to secure funding."); Letter from Venky Srinavasan, Founder & Chief Exec. Officer, & Vivek Gupta, Co-Founder & Vice President of Engineering, Zediva, to Julius Genachowski, Chairman, Fed. Commc'ns Comm'n (Dec. 10, 2010) ("The very real potential for unfair competition by incumbents who control the networks . . . causes great uncertainty about the size of the market and therefore reduces the confidence of [potential] investors in their ability to secure a reasonable return on their investment.").

[37] *See* Chairman Tom Wheeler, *FCC Chairman Proposal to Unlock the Set-Top Box: Creating Choice & Innovation*, FCC (Jan. 27, 2016), https://apps.fcc.gov/edocs_public/attachmatch/DOC-337449A1.pdf.

[38] *See generally* David Brodwin, *Carterfone Case Showed How Regulations Promote Competition*, USA TODAY (June 28, 2012, 4:30 PM), http://www.usnews.com/opinion/blogs/economic-intelligence/2012/06/28/carterfone-case-showed-how-regulations-promote-competition?src=usn_tw ("[The *Carlophone* ruling] led to extraordinary innovation. At first, it made possible an abundance of phones with advanced features and creative designs, plus modems, answering machines, computer terminals, and office telephone systems. Then it opened the way to routers, gateways, switches and all the third-party gear that powers the public Internet.

III. The Most Effective Way to Create Opportunities for Competition and Innovation in the Set-Top Box Market is the Competitive Navigation Approach, Not the Proprietary Applications Approach

The Commission has identified two approaches to increase competition in the set-top box market. The Competitive Navigation approach allows for all retail devices to receive cable data streams if the consumer has a subscription to that content. MVPDs argue that the Competitive Navigation approach is a repackaged CableCARD regime, and that the use of applications to deliver content will obviate the problems associated with CableCARD. That argument is misguided. The alternative approach the MVPDs advocate for, the Proprietary Applications approach, will perpetuate the most serious flaws and omit key advantages of the CableCARD scheme. The Proprietary Applications approach relies on MVPDs to create applications on retail set-top boxes. Set-top boxes would have the ability to display cable, but consumers would view that programming via an MVPD's proprietary application (if that application is available on the particular device). Fundamentally, the Proprietary Applications approach vests exclusive control with MVPDs to provide access to their programming while the Competitive Navigation Approach removes the MVPDs as the gatekeepers to competition and innovation—as the CableCARD regime originally intended.

A. The Competitive Navigation proposal will allow for entry, competition, and vigorous innovation in the set-top box market.

The Competitive Navigation approach is an essential component of the proposed rules because it addresses CableCARD's failures. While the CableCARD regime failed to account for MVPD incentives to impose high switching costs and keep consumers locked in to their provider-leased set-top box, the Competitive Navigation approach eliminates the MVPDs' position as gatekeepers. Requiring MVPDs to provide three core information streams in a standardized and interoperable fashion renders the physical CableCARD superfluous, removing the need for device manufacturers to negotiate with MVPDs. Instead of leasing such a card from their television provider, consumers would simply purchase a third party device or software that would instantaneously and seamlessly access and process data traveling through the information streams. Consumers would no longer need to rely on their television provider for access to the physical cards and for technical installation assistance, a crucial tripping point in the CableCARD framework.

The Competitive Navigation Proposal could lead to the innovations described above because it allows all forms of content delivery to compete on a level playing field, instead of creating artificial boundaries between cable and over-the-top programming. For example, MVPDs declined to provide On Demand access to consumers using alternative set-top boxes with CableCARDs, even when those consumers purchased television subscriptions including that feature.[39] Under the Competitive Navigation Proposal, however, MVPD services like On

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Without this crucial act of regulatory bravery in the face of corporate power we might still be tethered to copper wire to talk to each other.").

[39] *See, e.g., Use a CableCARD Instead of a Digital Converter*, XFINITY, http://customer.xfinity.com/help-and-support/cable-tv/what-is-cablecard (last visited Apr. 20, 2016)

Demand will compete with over-the-top providers like Netflix. Integrated search systems in a set-top box will enable consumers to directly compare On Demand, Netflix, and many other cable and over-the-top features.

MVPDs may argue that requiring only MVPDs to provide cable streams to *any* set-top box is one-sided, as it does not apply to over-the-top content providers, who can refuse to stream content on a competitors' set-top box. The MVPDs are correct. The requirement *is* one-sided because the MVPD market is not competitive. If the market for MVPD service were competitive, MVPDs who did not provide data streams to alternative set-top boxes could lose market share to startup MVPDs who provided their content to all devices. Unfortunately, high barriers to enter prevent new MVPDs from disrupting the market. Because "it appears that [alternative set-top boxes] are not used by consumers to access multichannel video programming, and are even more rarely used as the sole means of accessing MVPDs' programming," alternative set-top boxes cannot compete against MVPD-leased boxes without accessing cable programming.[40] Allowing MVPDs to refuse to distribute cable television would prevent the proposed rules from meeting the requirements of Section 629 (and prevent the proposed rules from achieving anything at all).

In contrast, requiring over-the-top content providers to provide data streams to every device is not a precondition for competition in the set-top box market. For example, Amazon Prime, a content provider and set-top box manufacturer, does not stream content on Apple TV, an alternative set-top box.[41] This decision may be rooted in Apple's high carriage fees, or because Amazon offers Amazon Fire, its own alternative set-top box. But unlike in the cable market, Amazon has indicated that it is considering offering Amazon Prime content to Apple TV in response to consumer demand.[42] This example indicates that competition and consumer preferences are disciplining content providers in the over-the-top market. Put another way, competition appears to be requiring that Amazon and Apple TV work together: if consumers demand Amazon Prime access more than they enjoy Apple TV as a platform, Apple will be forced to lower fees charged to Amazon to incentivize Amazon to provide its content. Conversely, if consumers value Apple TV over Amazon Prime content, Amazon Prime will be forced to reverse course and offer Amazon Prime on Apple TV or risk losing market share to

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("Using a CableCARD device instead of a Comcast digital converter means you will only be able to receive one-way digital cable channels and not be able to receive XFINITY On Demand, Pay Per View (PPV), or the interactive programming guide."); *see also CableCARD: Know Your Rights*, FCC (Dec. 15, 2015, 1:15 PM), https://www.fcc.gov/media/cablecard-know-your-rights ("CableCARD-ready devices currently cannot receive your cable operator's Video on Demand services.").

[40] Expanding Consumers' Video Navigation Choices; Commercial Availability of Navigation Devices, 81 Fed. Reg. 14,033, 14,035 (proposed Mar. 16, 2016) (to be codified at 47 C.F.R. pt. 76).

[41] Jacob Klein, *When Will Amazon Prime Be on Apple TV? Some More Rumors Circulating*, EXSTREAMIST (Jan. 3, 2016), http://exstreamist.com/when-will-amazon-prime-be-on-apple-tv.

[42] @danimal, TWITTER, (Nov. 27, 2015, 7:53 PM), https://twitter.com/danimal/status/670404993506127872/photo/1. Screenshot available on request.

companies like Netflix. This "invisible hand" effect does not exist in the multichannel linear cable market, where the lack of competition insulates MVPDs from consumer preference.

Ultimately, requiring MVPDs to deliver the three streams of content to all set-top boxes merely shifts competition away from a walled garden where alternative device manufacturers cannot compete—not for lack of a competitive product but due to monopoly control—to an open marketplace where incumbents and startup device makers will compete over access to over-the-top programming, device and content integration methods, user interfaces, and other innovative offerings that consumers value.

B. The Proprietary Applications Proposal reprises the flaws of the CableCARD regime and imprudently leaves control of content in the hands of cable companies.

The Proprietary Applications approach embraces the failures of CableCARD and solidifies MVPDs' positions as gatekeepers to the set-top box market. Under the CableCARD scheme, any device maker could manufacture a set-top box using CableCARDs, but MVPDs controlled access to the physical cards required to receive cable programming. This control placed MVPDs in a position to hold up consumers and abuse their monopoly power to subvert competition. The Proprietary Applications approach—by allowing MVPDs to selectively develop (or decline to develop) applications for specific platforms—repeats this flaw and in so doing curtails permissionless innovation. Device makers would find themselves designing a product for MVPD approval, rather than designing a product tailored to consumer demand. It is unlikely that MVPDs would want to develop applications—let alone high-quality applications—for potential market disrupters.

While MVPDs argue that the Proprietary Applications method would be simpler,[43] the lack of competitive market constraints require the Commission to ensure that MVPDs do not extend their monopoly power in the cable market to the set-top box market. Without meaningful rules, there are few ways to prevent MVPDs from (i) withdrawing support for applications, (ii) developing inferior products for competing set-top boxes, or (iii) outsourcing the development of applications to incumbent third-parties with existing contractual relationships (and loyalty to) MVPDs.[44] Innovation in the device market is best served by an approach that facilitates rigorous competition between incumbents and startups, rather than an approach that safeguards development by incumbent manufacturers with "business-to-business relationship[s]"[45] with

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[43] American Cable Ass'n (ACA), Comment on the Final Report of the Downloadable Security Technical Advisory Committee (Nov. 9, 2015), http://apps.fcc.gov/ecfs/document/view.action?id=60001334676.

[44] *See, e.g.*, Micah Singleton, *Comcast Will Bring its Xfinity App to Roku and Samsung Smart TVs This Year*, THE VERGE (Apr. 20, 2016, 4:39 PM), http://www.theverge.com/2016/4/20/11474026/comcast-xfinity-app-roku-samsung-smart-tv (explaining that, despite offering an application to set-top box manufacturers, such application will only be available to a "handful" of devices with established relationships with the MVPD).

[45] Expanding Consumers' Video Navigation Choices, 81 Fed. Reg. 14,033, 14,035 (proposed Mar. 16, 2016) (to be codified at 47 C.F.R. pt. 76).

MVPDs. We agree with the Commission that such rules "do not offer consumers viable substitutes to a full-featured, leased set-top box[es]."[46] Such an approach would be especially burdensome for startup device manufactures that lack established relationships with MVPDs.

Furthermore, the Proprietary Applications approach is *always* available to cable companies, regardless of the framework adopted by the Commission. MVPDs always have the choice to innovate and expand consumers' access to their programming, a choice some have exercised by developing applications that grant restricted access for a limited number of devices.[47] It's no coincidence that MVPDs—faced with the possibility of meaningful competition in the set-top box market—are now releasing apps for alternative set-top boxes. For example, Comcast recently announced it will make its Xfinity Application available on alternative set-top boxes and smart televisions.[48]

Far from validating the Proprietary Applications proposal as the correct rule, Comcast's decision indicates that MVPDs are fully capable of producing proprietary applications and do not need their preferred business strategy encoded in the Commission's rules. Furthermore, MVPDs have already demonstrated a tendency to control access to cable content when producing their applications: only a "handful" of devices are expected to carry the Xfinity application this year.[49] The Proprietary Applications approach would exacerbate already strict controls on access to content. While such applications can be useful and are an important step in the direction of enabling consumers to access their paid programming, they cannot be the only source of competition in the concentrated set-top box market. Overall, the Proprietary Applications approach would not ensure "a commercial market for devices that can access multichannel video programming."[50] It would position MVPDs as gatekeepers to competition and innovation and perpetuate the fundamental flaws of CableCARDs.

IV. Whatever Rules the Commission Adopts Should Prevent Evasion and Should Be Designed with Consumers in Mind

In crafting successful rules, the Commission should ensure that they do not contain loopholes that permit MVPDs to develop or deploy alternative methods of control that exclude or hamper rivals and deprive consumers of the benefits of competition and innovation. The new

[46] Expanding Consumers' Video Navigation Choices; Commercial Availability of Navigation Devices, 81 Fed. Reg. 14,033, 14,035 (proposed Mar. 16, 2016) (to be codified at 47 C.F.R. pt. 76).
[47] Comcast Corp., Comment on DSTAC Report at 3 (Oct. 8, 2015), http://apps.fcc.gov/ecfs/document/view?id=60001328358.
[48] Micah Singleton, *Comcast Will Bring its Xfinity App to Roku and Samsung Smart TVs This Year*, THE VERGE (Apr. 20, 2016, 4:39 PM), http://www.theverge.com/2016/4/20/11474026/comcast-xfinity-app-roku-samsung-smart-tv.
[49] *Id.*
[50] Expanding Consumers' Video Navigation Choices; Commercial Availability of Navigation Devices, 81 Fed. Reg. 14,033, 14,037 (proposed Mar. 16, 2016) (to be codified at 47 C.F.R. pt. 76).

rule can meet the objectives of Section 629 by limiting switching costs and correcting for informational asymmetry.

A. Rules should prevent MVPDs from continuing to exert control over how consumers receive programming.

The CableCARD scheme provides a cautionary tale as to how rules intended to achieve the goals of Section 629 can be manipulated. Where, as here, some entities have market power and the incentive to distort competition, the Commission must take care to craft rules that effectively constrain that power. Several areas that pose particular risk are outlined below; however, the Commission should continue to monitor the market to ensure that unforeseen market distortions do not once again undermine the pro-innovation, pro-competitive steps created by the rule it ultimately adopts.

1. The rules should ensure that MVPDs are not able to direct consumers away from alternative set-top boxes.

The rules should address the possibility that MVPDs could use monopoly control in cable and broadband internet markets to direct consumers away from alternative set-top boxes and over-the-top content. For example, MVPDs could increase the cost of cable alternatives by metering data,[51] charge higher cable fees to recover the lost profits from their legacy set-top box monopoly,[52] or require consumers to pay device service or account access fees for the privilege of using alternative set-top boxes. The Commission should design prophylactic rules to prevent such forms of monopoly maintenance that would restrict consumers' ability to use set-top boxes designed by both startups and incumbents.[53]

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[51] Letter from Matthew P. Zinn, Senior Vice President, General Counsel, Secretary & Chief Privacy Officer at TiVo Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, at 5 (Dec. 7, 2015), http://apps.fcc.gov/ecfs/document/view.action?id=60001352046. Such methods could impact other markets as well. For example, even if metered data did not diminish incentives to innovate, the method would still harm consumers by impairing their internet experience. *See also* Editorial, *FCC Right to Think Outside the Cable Set-Top Box*, SEATTLE TIMES, Mar. 2, 2016, http://www.seattletimes.com/opinion/editorials/fcc-right-to-think-outside-the-cable-set-top-box ("Cable companies might also respond by stepping up efforts to meter data. . . . This could mean stricter caps.").

[52] Editorial, *FCC Right to Think Outside the Cable Set-Top Box*, SEATTLE TIMES, Mar. 2, 2016, http://www.seattletimes.com/opinion/editorials/fcc-right-to-think-outside-the-cable-set-top-box ("Companies like Comcast may find ways to charge fees for devices that receive their signal.").

[53] *See also* Harold Feld, *Cable Set-Top Box Arguments: Nothing But Reruns*, WETMACHINE (Apr. 21, 2016), http://www.wetmachine.com/tales-of-the-sausage-factory/cable-set-top-box-arguments-nothing-but-reruns. ("[S]wapping one thing Comcast controls for something else Comcast controls is not 'solving the problem.' (internal quotation marks removed)).

2. When designing its rules, the Commission should avoid inadvertently granting MVPDs additional control.

As the Notice of Proposed Rulemaking indicates in its discussion of security,[54] the Commission should be careful when evaluating proposals that vest additional control with MVPDs. The Commission should apply the same analysis here that it applied when analyzing the HTML5 security approach: "leaving total security decisions to MVPDs . . . perpetuate[s] a market in which competitors are compelled to seek permission from an MVPD in order to build devices that will work on its system," which does not meet Section 629's objectives.[55] This analysis should extend to all rules, including those unrelated to security.

The Commission should be suspicious of proposals that require extensive authorization, authentication, or log-in processes.[56] MVPDs already provide some cable access to alternative set-top boxes via CableCARDs; extensive additional security features are unlikely to be necessary. Furthermore, MVPDs already provide third-party authentication for services like HBOGo, which is an over-the-top internet video service generally available only to paying MVPD subscribers. Allowing MVPDs to require more burdensome security or authentication setups may result in decreased competition and not in increased security.

Security rules should be flexible, allowing the Commission to meet their fifth goal, that "rules should be technologically neutral . . . and not impede innovation."[57] Flexible rules would also allow the Commission to implement updates should the proposed framework fall short of Section 629's objectives. Unfortunately, the current proposal potentially leads a de facto HTML5 approach, which the Commission has rejected as failing to meet Section 629's objectives, because it grants MVPDs and major content providers the power to choose between

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[54] Expanding Consumers' Video Navigation Choices; Commercial Availability of Navigation Devices, 81 Fed. Reg. 14,033, 14,041 (proposed Mar. 16, 2016) (to be codified at 47 C.F.R. pt. 76).
[55] *Id.* at 14,042.
[56] For example, extensive MVPD-required authentication procedures to ensure devices have not been compromised (such as removing security alerts) are likely excessive if they go far beyond what is currently used to ensure proper devices and could indicate attempts to increase barriers to using alternative devices to watch subscribed content. *Id.* at 14,045.
[57] FCC, Memorandum Opinion and Order on Proposed Rule for Expanding Consumers' Video Navigation Choices & Commercial Availability of Navigation Devices ¶ 30 (Feb. 18, 2016). Though we do not comment extensively on which security proposal to take, we do note that the "single point of attack" criticism of the Media Server approach is flawed. Security mechanisms do not derive strength through obscurity. Standards can be updated if there are problems and publically analyzed for issues. Furthermore, the individual systems in use now are not particularly obscure. The largest players control enough of the market to be targeted as if there was only one point of attack. Finally, in this situation, having multiple attack vectors could actually be worse than a single vector because all vectors lead to the same content: multiple points of attack would merely provide multiple options to break in, some of which could be weaker than others.

the two security mechanisms, and they uniformly prefer the one that the Commission rejects.[58] As MVPDs and major content providers strongly prefer the HTML5 approach and enjoy substantial market power, granting them choice directs the market in their preferred direction, ultimately leading to the HTML5 approach. The Commission should be careful to ensure that the three Information Flows are actually and *practically* licensable "on reasonable and non-discriminatory terms, and . . . not controlled by MVPDs."[59]

The Commission should also be cognizant of other potential avenues for MVPD control, including misconstruing "on reasonable and non-discriminatory" terms of access. MVPDs could also advocate for certain technological requirements of cable boxes that would be unduly difficult for small device manufacturers to create but provide few consumer or content-provider benefits. The Commission should also be conscious of the possibility of regulatory capture of the Open Standards Body designated to set the terms and standards of interconnection.

B. The Commission should anticipate consumer inertia.

Consumer inertia driven by market "stickiness" and information asymmetry could impede innovation. The Commission's rules should be crafted with this potential inertia in mind.

The subscription-based model of MVPD services makes the market "sticky." Consumers cannot switch to a different set-top box before their contract expires without incurring additional losses from breaking the contract. The Commission can counteract some of the market stickiness with rules that make replacement relatively seamless and low or no cost (beyond the cost of the third-party products). In addition, the Commission should also consider that some delay in the impact of the rules will be a natural reflection of market structure and not a reflection of suboptimal policy.[60]

Information asymmetry between consumers and providers may also impact competition. If consumers are not aware that they can replace their set top box, or are unable to do so by making reasonable efforts, they will be unlikely to move away from a leased box. Cognitive and time-intensive switching costs were a contributing factor to the ineffectiveness of CableCARD. A "7 hour installation process that [takes] many phone calls, tweets, direct messages and two visits from a Verizon installer to finish up"[61] deters consumers from switching. While extensive switching procedures and headaches may reflect MVPD manipulation, they may also reflect a process that requires technological expertise. Considering that an integrated set-top box could assist those less technologically proficient with accessing over-the-top programming, the

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[58] Expanding Consumers' Video Navigation Choices; Commercial Availability of Navigation Devices, 81 Fed. Reg. 14,033, 14,042 (Mar. 16, 2016) (to be codified at 47 C.F.R. pt. 76).
[59] *Id.*
[60] *See* Jefferson Graham, *Cutting the Cord with a CableCARD*, USA TODAY (Oct. 12, 2015, 1:20 PM EDT), http://www.usatoday.com/story/tech/2015/10/12/cutting-cord-cable-card/73817426 ("Even though I was physically holding the card [it had to be 'processed' and wouldn't be until October 20th]. . . . [because] [m]y billing cycle starts on the 20th, and Verizon . . . didn't want me to have free service for 10 days.").
[61] *Id.*

Commission should consider ensuring that consumers are adequately informed of their freedom to choose an alternative set-top box and to switch without undue cost or burden.

V. Conclusion

The Competitive Navigation approach will bring much needed competition into the set-top box market by addressing the shortcomings of CableCARD. This approach allows consumers to receive multichannel linear cable programming through what will become a rich array of devices and systems without leasing and installing a set-top box or CableCARD from their television provider. As a result, the Competitive Navigation approach will create the opportunity for a robust environment of startups and other entrants to develop and market an array of innovative devices and services, and for content creators and distributors to better reach viewers on a more even basis with established producers. Consumers will pay dramatically lower prices and have a vastly expanded set of choices for how they search for, navigate, access, store and view the full range of content for which they have paid or are otherwise legally entitled to access. Consumers, creators and innovation will be the big winners under this new framework.